

## WILL CHECK COTTON PLAGUE.

Government Nitrate Plant Expected to be of Help to Farmers in War on Boll Weevil.

There is little connection apparent between the establishment of a government plant for the manufacture of nitrates from the nitrogen of the atmosphere and the little boll weevil, which is such an important factor in the life of the cotton farmers of the country. Yet many observers of the activity of this well known insect believe that in establishing a plant to draw on the nitrogen of the atmosphere for the various needs of the country, one of the strongest weapons is being provided for the fight against the cotton farmer's foe. This, of course will be felt by every user of cotton—meaning every individual, for cotton is today the universally used article. This war is to be waged in large part by bringing the crop to early maturity. The weevil begins its attack upon the cotton plant when it is in the bud and works upon the crop until the bolls are half matured. The first appearance of the Weevil takes place in June, when the buds are beginning to form, but its worst and most effectual ravages are in August, when it is too late for the plant to put on more buds. It is therefore necessary to bring about an earlier maturing of the crop.

Nitrogen put into the soil in some form where it can be taken up by the growing plant is the element playing the strongest part in this work. It is also the element first exhausted, and cotton is a plant making the greatest demands upon soil fertility. For this reason, successful cotton growing, with a production that will keep up with the country's supply of this material, demands that the farmer be provided with some fertilizer that is both high in per centage of nitrogen and that it be supplied at a price that will enable him to make a liberal use of it.

With the exhaustion of plant food that is used by the cotton crop, the production per acre is reduced. It requires four acres now, with four times the soil and expenditure, to produce the amount of cotton produced on one acre originally. For this reason, the farmer, in order to reach a certain production, reduces the attention given to each, permitting the boll weevil to thrive and increase in numbers and activity.

That the production of each acre can be greatly increased, provided that the farmer does have a supply of fertilizer at a price he can afford to pay, is shown by the results of the state test farms of North Carolina, of which Dr. B. W. Kilgore, the famous agricultural expert, is the director. These tests covered a period of five years, under all sorts of conditions. On land that was not fertilized, the average crop was only 176.6 pounds per acre. But when 200 pounds of a nitrogenous fertilizer was applied, the same ground yielded 656.5 pounds of cotton at a profit of \$8.10 per acre.

An application of 400 pounds per acre brought about a production of 912.9 pounds with a profit on the acre of \$27.53; 1,000 pounds producing 1,180.9 pounds of cotton with an average profit of \$36.86.

On account of the demands of the cotton crop, the farmers in the seven cotton states are now using 60 per cent of the fertilizer sold in this country. They are paying a freight rate of \$5 a ton, an enormous profit to the nitrate field owners of Chile, an export tax and ocean freights. All of this will be remedied by the establishment of a government plant for obtaining nitrogen from the air. Because of the enormous initial investment required, and the fact that a great water power is necessary, it is recognized by the farmers union and the national grange that the government is the proper builder of such a plant if the price is to be kept low. In resolutions presented to congress recently, they asked that such a plant be located in the region where the greatest supply of fertilizer is needed.

Another requisite of a plant of this character is a large supply of phosphate rock close at hand, because the best form for this fertilizer is ammonium phosphate which combines two great plant foods and also contains 60 per cent of plant food as against 12 per cent in the ordinary fertilizer, thus reducing the bulk of material required by the farmer, with a resultant reduction in hauling, and labor of applying.

To operate the nitrogen plant it will be necessary to have an enormous amount of cheap power, which is developed best and most economically by water power. The only place in the south at which this can be done, according to government investigations, is Mussel Shoals, on the Tennessee river, where, according to a board of army engineers, a minimum of 120,000 horse power is available, which can be increased when necessary, to 680,000 horse power for a large part of the year. This site, fortunately, is located within 60 miles of the center of one of the largest phosphate fields in the country, which runs down to the Tennessee river, close to Mussel Shoals itself. The brown phosphate of this region is being extensively developed, and the blue rock, which is closest, will be developed when modern electro-chemical process will be rendered available by the cheap power.

The same site is surrounded by immense fields of limestone, while some of the largest coke ovens of the country are around Birmingham, Ala., which is within a day's haul. The fact that both of these materials are required in the process of obtaining nitrogen from the air makes this a distinct advantage.

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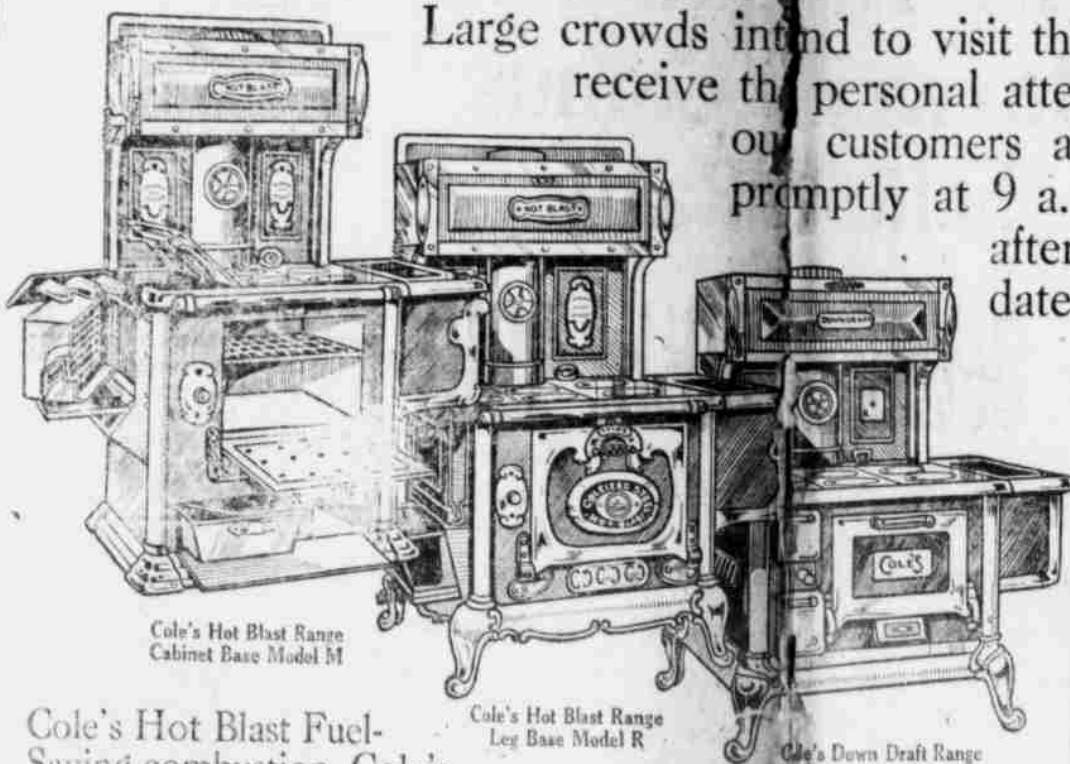
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nitrate plant, it is highly probable that the plant will be located at this point. The importance of nitrogenous fertilizer to the south is being actively supported by the movement that has been started to bring this plant.

### THE CAUSE OF DREAMS.

Psychologists have given considerable thought and study to the subject of dreams but there are many questions concerning them and phenomena associated with them, the actual state of the unconscious mind and the relation between the mind and the body when we dream, etc., which have never been answered satisfactorily. It is impossible to say why we dream in all cases or to account for the nature of some of our dreams, as when we dream about things we never saw or thought of or experienced, things that never existed and that to our waking minds are utterly preposterous and foolish.

The cause of most of our dreams can be determined with a fair degree of certainty. For example, when we have a dream that frightens us—a nightmare—it is usually caused by distress and uneasiness in the stomach resulting from indiscretion in eating. In many cases, it appears, dreams are caused by some sensory impression received by some center of the brain, such as that of hearing, touch, smell, etc.

Results of a number of interesting experiments dealing with the causes of dreams, conducted by Alfred Maury are recorded in a recent number of the Scientific Monthly, essentially as follows: In one test the experimenter caused himself to be tickled on the lips and inside the nostrils while he slept. This resulted in a dream that he was subjected to a terrible punishment, a mask of pitch being applied to his face, then roughly torn off, removing with it the skin of his lips, nose and face.

When a pair of tweezers was held near his ear and struck with a pair of scissors, the sound impression caused him to dream that he heard the ringing of bells. A bottle of perfume held near his nostrils caused him to dream that he was in a perfumer's shop. In another experiment a burning match was held near his nostrils while a wind was blowing through the room. This caused him to dream that he was aboard a ship and the magazine had blown up.

When he was slightly pinched on the nape of the neck he dreamed that a blister was applied and this recalled to his mind a physician who had treated him in childhood. A red hot iron held close enough to his body for a slight sensation of heat to be felt caused him to dream that robbers were in the house and that they were putting the feet of the inmates to the fire in order to force them to disclose the hiding place of valuables.

The word Lenore was spoken and when he awoke he recollected it and

found that he had attributed it to one of the persons who had conversed with him in his dream. When a day later he dreamed that he was in Italy, that he was very warm and was drinking wine. A light surrounded with red paper and repeatedly placed before his eyes caused a dream in which a tempest and lightning figured.

### HOW HOT WEATHER COMES

During an exceedingly hot spell the weather forecasters in Washington, watching for an indication of the break up of the abnormal weather, keep one eye on the Atlantic ocean and the other on the Pacific, the Kansas City Star says. Slight changes in the barometric conditions in the West Indies and the Azores, combined with changes in Honolulu and Alaska, may be the forerunners of a resumption of normal conditions throughout the United States.

In the summer, as the land heats up, the ocean remains considerably cooler than the continents. So masses of cool heavy air accumulate over them, eddying about a center in the direction taken by the hands of a clock. These great eddies show high barometric pressure, and so are called "highs." In the summer months they usually occupy a definite position, with little shifting. When this is the case the season is normal.

But let them shift a few hundred miles and they play hob with the weather of the Mississippi valley. Last summer, for instance, the Pacific high was north of its usual place, and it poured down cool air from the northwest over the great plains, and produced a cool, wet season. But let the Pacific high retreat toward Asia, and the Atlantic high move toward the Caribbees, and the plains are deluged with hot winds from the south, pumped up by the whirl of the high.

The Washington observers have only a few reports from the ocean to base their predictions on—too few to make sure of the results. But if they find indications of a shift in the position of these oceanic highs, then they begin to be hopeful of a break-up of the hot weather. When they report on Saturday afternoon that there is no present sign of a change, that means that the highs show no disposition to get back to their proper places.

### THE THIRD DEGREE

A month ago Onni Talas, a frail young boy, was in the death cell at Sing Sing awaiting electrocution. He had been convicted of complicity in the murder of Mrs. Elizabeth Nichols, a wealthy woman of New York. Gov. Whitman commuted the sentence to life imprisonment and the boy, broken in body and mind, was listed among those who are doomed to be pent up by their fellow men until death offers release.

Arthur Waltonen, arrested at Ironwood, Mich., the other day, confessed

to the crime.

New York is considering the conviction of the boy, as an instance of the police all too well.

Mrs. Nichols was found murdered in her room and \$17,000 in jewels had been stripped from her body. The pantry boy, Talas, was arrested. He is a frail, weak youth. In the witness stand he declared that Waltonen, who was formerly butler in the Nichols home, entered the house, intimidated him at the point of a revolver, bound him hand and foot and left him in a different part of the house from where the body was found. He stated further that the detectives, after the escape of the real culprit, took him into a room next to where the body of Mrs. Nichols lay, beat him, twisted his arms, hit him with blackjacks and otherwise tortured him for twelve hours. He said he was so enfeebled he had not the will to oppose longer the demand for a confession.

Upon a story wrung from him by torture of the third degree, Talas was condemned to death. Now Waltonen has confessed to the crime and it is expected that the former pantry boy will be freed soon. All of which goes to show how the third degree, used ostensibly for the purpose of detecting crime, comes nearer to being crime itself.—Chattanooga News.

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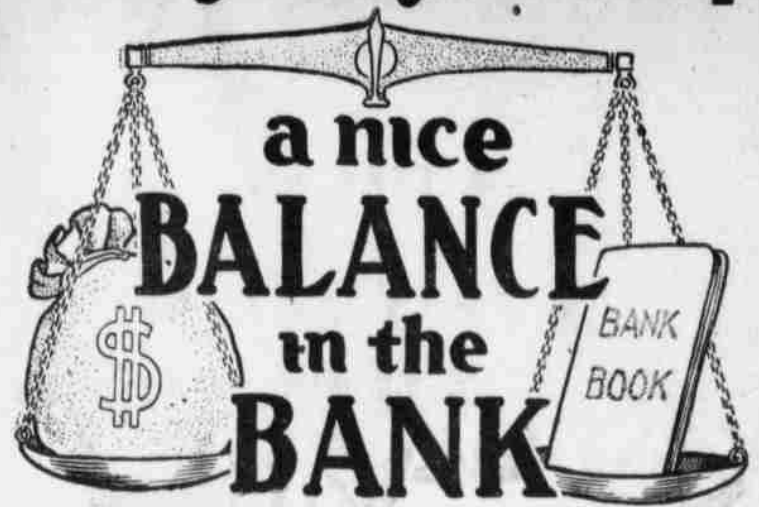
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